SMOKE LOCOMOTIVES

Most Lionel steam-type locomotives are equipped to produce odorless, realistic "smoke." Drop a smoke pellet into the smoke stack and turn on the track power. In a few seconds the heater within the smoke generator will melt the pellet and smoke will rise out of the stack. The locomotive will puff only when the wheels are turning.

Each pellet has enough smoke material to last a long time. For best results use up one pellet before dropping in another. Too many pellets will actually reduce the amount of smoke.

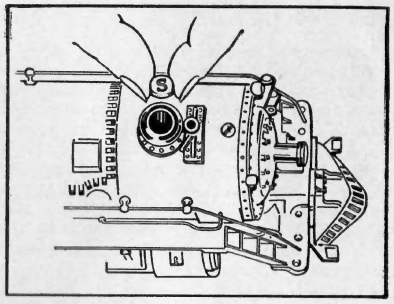

Figure 12—How to Load Smoke Pellets Into Locomotives

After the locomotive has been used for a while it may produce less smoke than it did at first. This may be caused by smoke material clogging up the air opening inside the generator. Increase the track power slightly and let the locomotive stand in neutral for a few minutes. This treatment clears the smoke generator and the locomotive will puff as well as ever.

Figure 13
SP Smoke Pellets

All modern Lionel locomotives must use *SP Smoke Pellets* which come in glass bottles, as shown in Figure 13. *Don't use any other material* or you may destroy the smoke generator.

After a few hours of use you may find that a white powder has collected in the smoke stack. This is all smoke material. Push it back into the smoke stack with the wood tamper provided. A whitish deposit on the locomotive body can be cleaned off with soft cloth moistened with a little Lionel Lubricant.

SP Smoke Pellets have been rigorously tested by recognized testing laboratories. They are absolutely harmless even if accidentally swallowed.

SHORT CIRCUITS

Most troubles in running an electric train are caused by accidental short circuits. A short circuit is a direct connection between two transformer posts. It is caused most often by a derailed wheel touching the center rail and the outside rail. A short circuit causes an excessive current to be drawn from the transformer. When a short circuit occurs the train stops, the lights dim or go out altogether; the transformer overheats and, if unprotected, will burn out.

To protect the transformer from the danger of burn-outs most modern Lionel transformers are equipped with built-in circuit breakers. If too great a current is drawn from the transformer, the circuit breaker opens and cuts off all power from the track. In a few seconds the circuit breaker resets automatically but will reopen almost immediately if the short circuit still exists. Lionel transformers RW, KW and ZW are also equipped with red warning lights which go on whenever a circuit breaker opens.

REMOTE CONTROL TRACK SETS

Lionel Remote Control Track Sets consist of a two-button controller wired to a special track section which has five rails and a centrally-located built-in electromagnet. The special sections are inserted into the layout as any ordinary track and are used to uncouple cars and to operate automatic unloading cars. One Remote Control Set is furnished with every Lionel outfit. Additional sets can be purchased and installed to permit uncoupling and operation of cars in as many places in the layout as you wish. It is best to have one regular straight section on either side of the special track.

The set used on "O" gauge track is known as UCS; a similar set matching "027" track is No. 6019.

COUPLING AND UNCOUPLING CARS

All standard Lionel cars and tenders, as well as switching, electric and diesel locomotives, are equipped with operating railroad-knuckle couplers. Although two types of couplers are used—the "electro-magnetic" for locomotives and for extra-long cars and the "magnetic" for most ordinary cars—both can be opened by the same Remote Control Track.

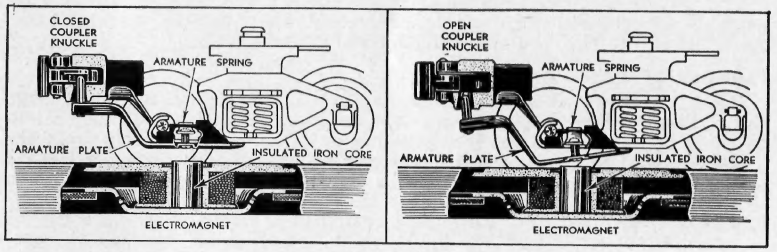

Figure 14—How "Magnetic" Couplers Operate

To open a closed "magnetic" coupler move the car so that the front wheels are over the central electro-magnet; then press the "Uncouple" button. The coupler can also be opened while the car is in motion by pressing the "Uncouple" button at the proper moment.

To open a closed "electro-magnetic" coupler move the car so that the sliding shoe underneath the truck you want opened rides up on one of the control rails; then push the "Uncouple" button.

Both types of couplers are closed simply by pushing the open knuckle in until it latches, so to couple any two cars just push them together. Only one of the mating couplers has to be open for the cars to couple or uncouple.

Cars or locomotives equipped with "electro-magnetic" couplers are wired so that both couplers open when the "uncouple" button is pressed. "Magnetic" couplers can be opened separately.

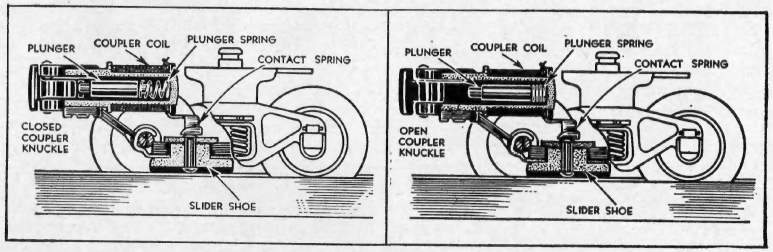

Figure 15—How "Electromagnetic" Couplers Operate